

## QRIS-Based Payment System at Loddy's Pet Shop Cirebon

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### ABSTRACT

The development of information technology encourages business actors to shift from manual systems to more efficient computerized systems. Loddy's Pet Shop Cirebon still uses manual (non-computerized) transaction recording, which is prone to human error, data loss, and delays in financial reporting. This research aims to design and implement a payment system based on the Quick Response Code Indonesian Standard (QRIS), integrated with the store's cashier system, to facilitate transaction processing and financial recording. The research method used is descriptive, with data collection techniques including observation, interviews, and literature study, while the system development adopts the *Rapid Application Development* (RAD) method. The system is built using PHP and MySQL and integrated with the Midtrans payment service to generate dynamic QRIS codes. The implementation results show that the system can minimize recording errors, accelerate payment processes, generate financial reports automatically, and improve operational efficiency. With this system, Loddy's Pet Shop can enhance service quality and gain a competitive advantage in the digital era.

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## 1. INTRODUCTION

In the digital era, the use of computerized information technology has expanded into almost all sectors of work, including in the business field. Information technology, especially computers, is often used to support company operations. One of its applications is in the payment system for sales activities, which business actors highly need because it plays a crucial role in maintaining business continuity [1]. Loddy's Pet Shop specializes in selling pet care products. The increase in product demand coincides with growing public awareness of the importance of caring for pets.

However, Loddy's Pet Shop is one of the pet stores whose sales system is still not computerized, so the store faces various challenges in its operations, especially in transaction recording, which is done by writing in receipt books and is not yet integrated with stock

systems or sales reports. This non-computerized recording is highly vulnerable to human error, such as entering incorrect prices or quantities of goods, or forgetting to record transactions [2].

In addition to errors in recording, the admin also needs time to correct receipts, which causes customers to queue and become unwilling to wait [3]. In fact, sales are an important part of in company's operations. If management is not carried out optimally, it can harm the company by reducing profits and decreasing revenue [4].

The problem at Loddy's Pet Shop is inefficiency in managing transactions and stock due to a non-computerized system, which makes recording prone to human error. Therefore, the application of technology is expected to bring significant benefits in increasing the efficiency and accuracy of records, enabling Loddy's Pet Shop to be more competitive in the pet shop industry [5].

The uniqueness and difference of this research compared to other studies is that it focuses on developing a system integrated with both cash and Quick Response Code Indonesian Standard (QRIS) payments [6], specifically designed for Loddy's Pet Shop. Some other studies may focus solely on sales systems without QRIS integration. With QRIS, transaction efficiency and security can be improved, both in digital payments and product tracking [7], [8].

The purpose of this study is to design a financial information system accessible via a localhost server. This system can provide financial and other pet product-related information, such as income and expenses, making it easier for admins to obtain accountability information and record payments quickly, easily, accurately, and systematically [9].

## **2. METHOD**

The research method applied in this writing is the descriptive method, as the author conducted research through direct observation and field study to examine the recording process, payment, and other activities at Loddy's Pet Shop [10]. The techniques applied in this study are as follows:

### **1. Observation**

The first method is to observe the object being studied. Observation refers to the process of observing the conditions and situations of the research object [11]. The author conducted participatory observation in the admin section by examining the payment process used. Based on the observation results, when the admin calculated the total payment, errors and inaccuracies were found, requiring recalculation.

### **2. Interview**

The second method is conducting interviews. In conducting interviews, it is preferable that the interviewee not know the interviewer's intention and purpose, so that the results are as expected [11].

The author interviewed the Store Manager and customers to collect the necessary data for this study. From the interview results, the Store Manager stated that store operations could still run smoothly without financial reports, as he preferred to focus on

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activities that directly generated income rather than preparing them. Meanwhile, some customers admitted that they felt reluctant to wait when the store was crowded.

### 3. Literature Review

The third method is to collect data by studying theories and concepts from the literature relevant to the research problem. Data were obtained from various sources, such as books accessed through libraries and journals obtained online, which are relevant to the issues being studied, thus providing useful information to complete the research [12].

The author conducted a literature review by gathering references from books available on the Google Books website, physical books obtained from Gramedia, relevant online journals and internal documents from 'Loddy's Pet Shop'.

Rapid Application Development (RAD) is an object-oriented system development approach that utilizes methods and software tools to accelerate the development of information systems [13], [14]. Its purpose is to shorten the development cycle, particularly between the design and implementation stages, by combining structured techniques, prototyping, and joint application design [15], [16]. In this study, the RAD method is used as a guideline for application development, which includes requirement planning, system design, development, and implementation stages [17].

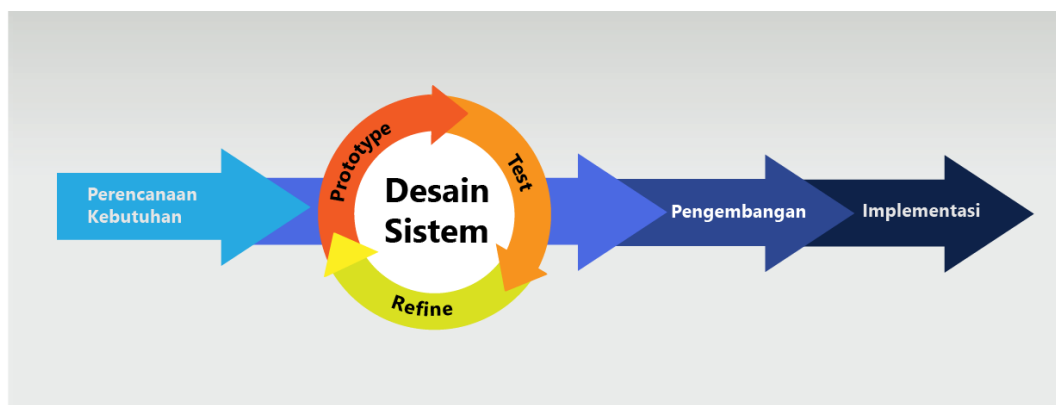


Figure 1. Stages of the RAD Method

Requirement Planning is the process of analyzing the systems users need for operational activities at Loddy's Pet Shop, which are currently carried out manually, such as in the transaction recording system for sales and purchases, including sales data and product data. Additionally, for the Owner/Store Manager, the process of checking available stock is still done manually, item by item.

### Flow Map

A Flow Map is a combination of a map and a flowchart used to illustrate the movement of an object or the flow of a process from one location to another [18]. An illustration of this flow is shown in the following figure.

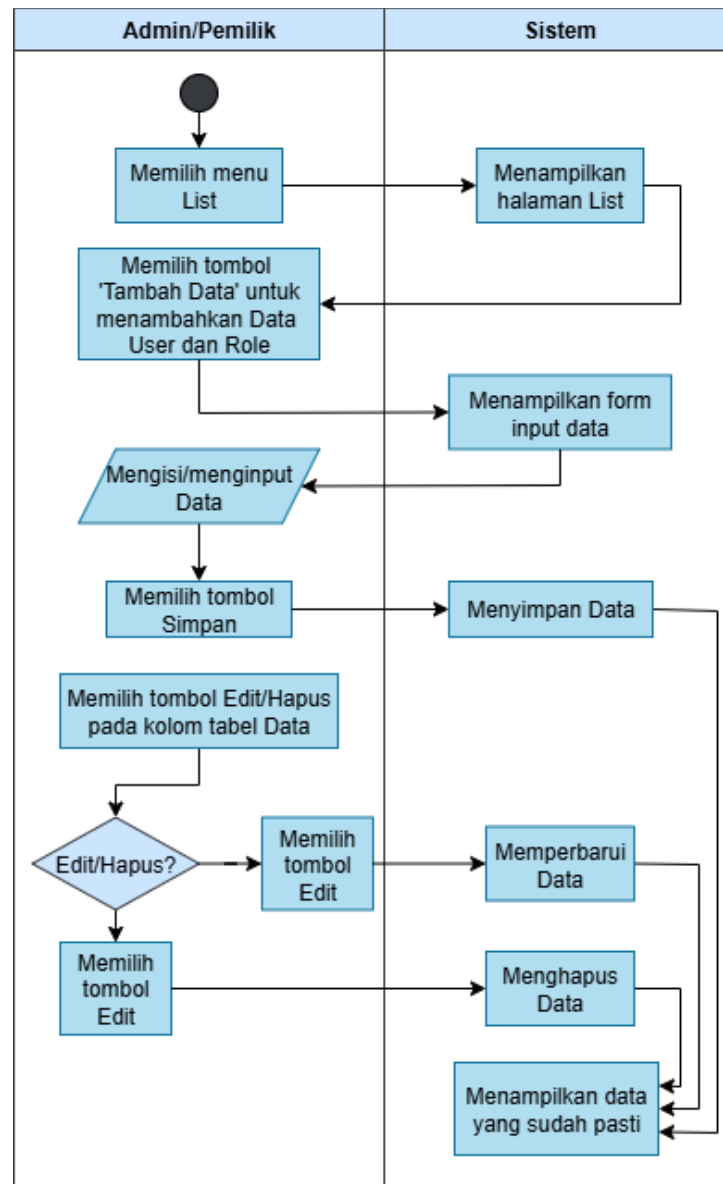


Figure 2. Flow Map (Input Data, User, dan Role)

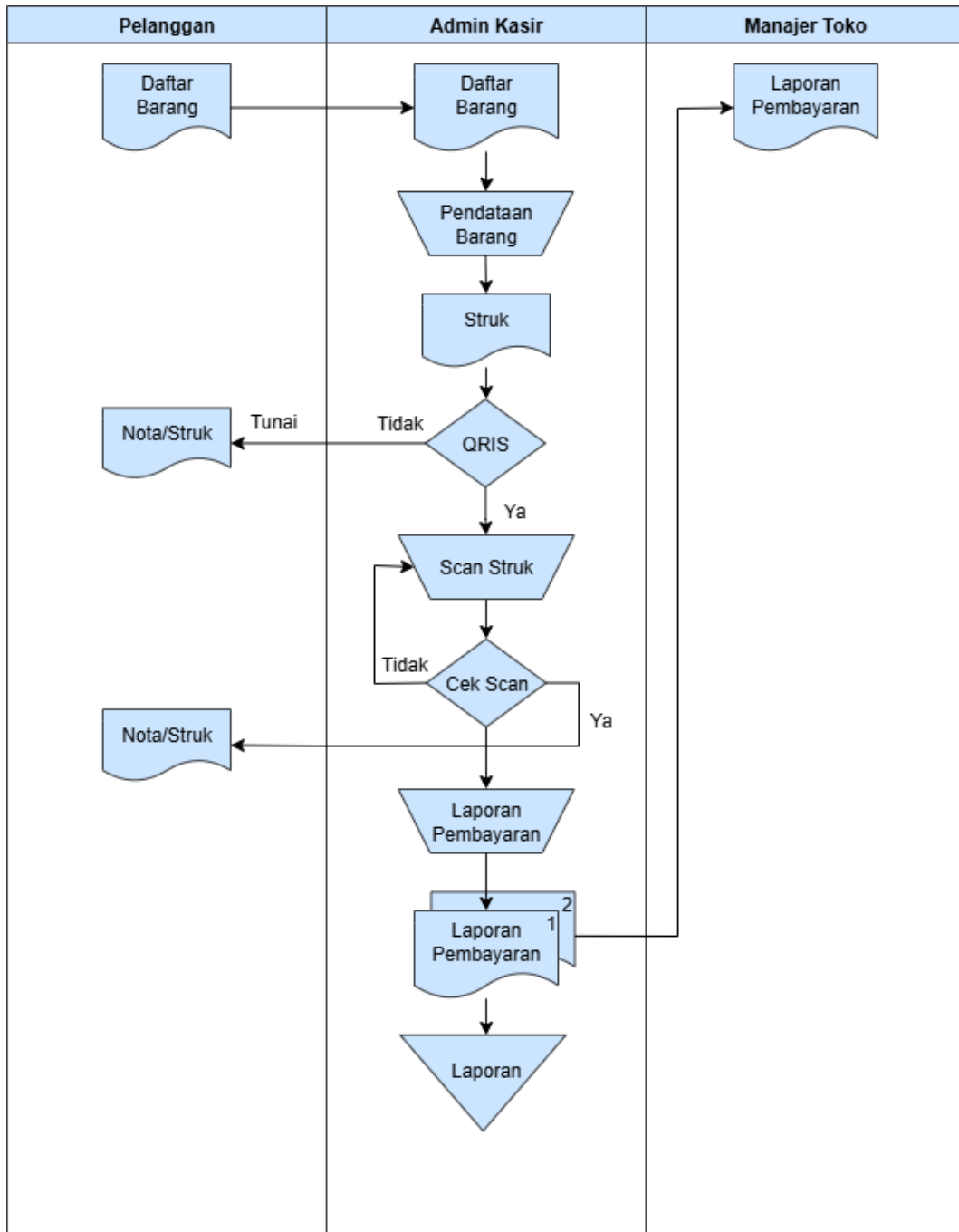


Figure 3. Payment Flow Map

### Use Case Diagram

Here is the Use Case Diagram that illustrates the interaction of three main actors: Warehouse Admin, Cashier Admin, and Store Manager, with the system, where the User actor represents all three roles [19].

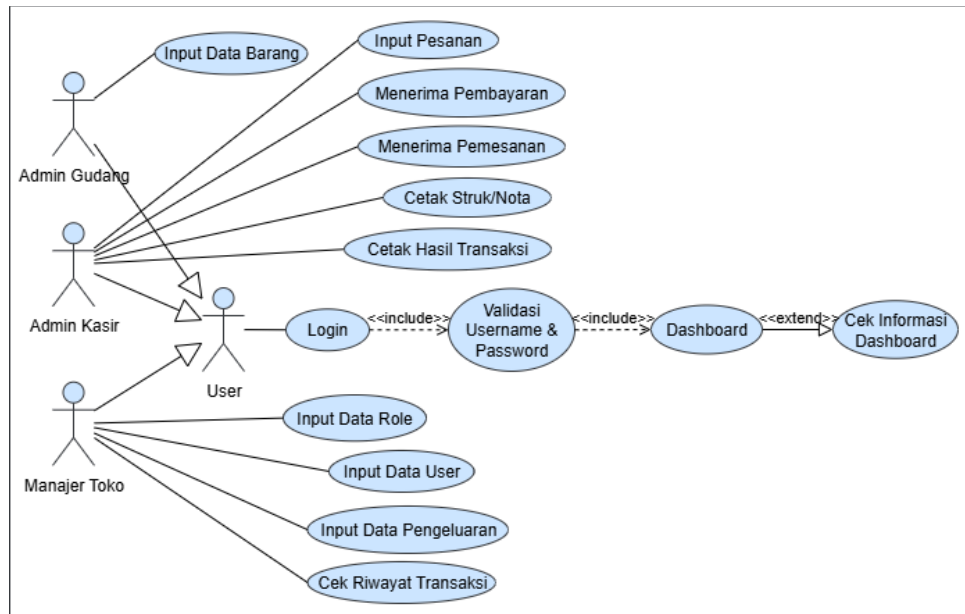


Figure 4. Use Case Diagram

**Class Diagram**

A Class Diagram represents the static structure of a system. One object of a class can be associated with multiple objects from another class [20].

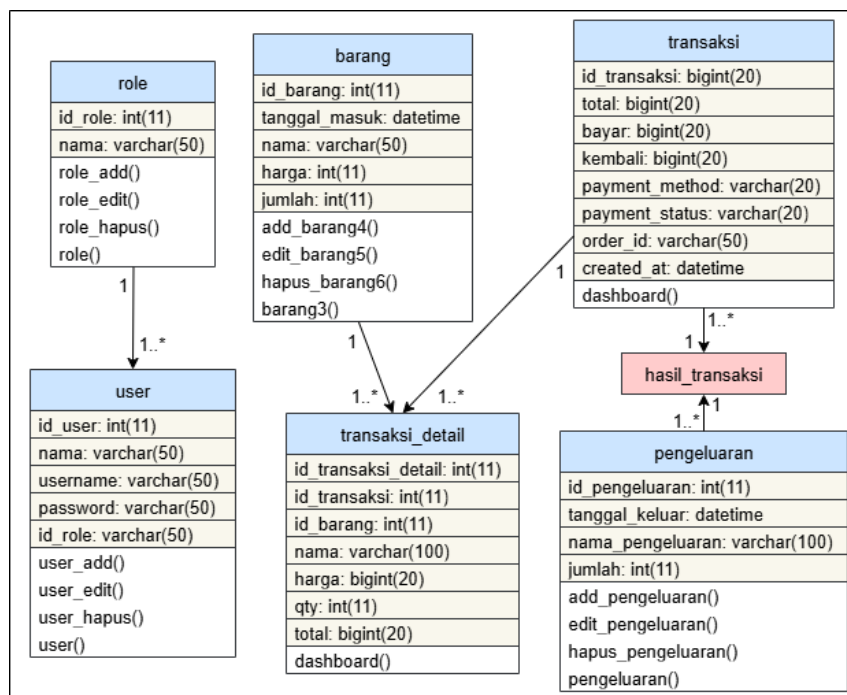


Figure 5. Class Diagram

**Activity Diagram**

An Activity Diagram depicts the workflow or sequence of activities. The following is an illustration of an activity diagram.

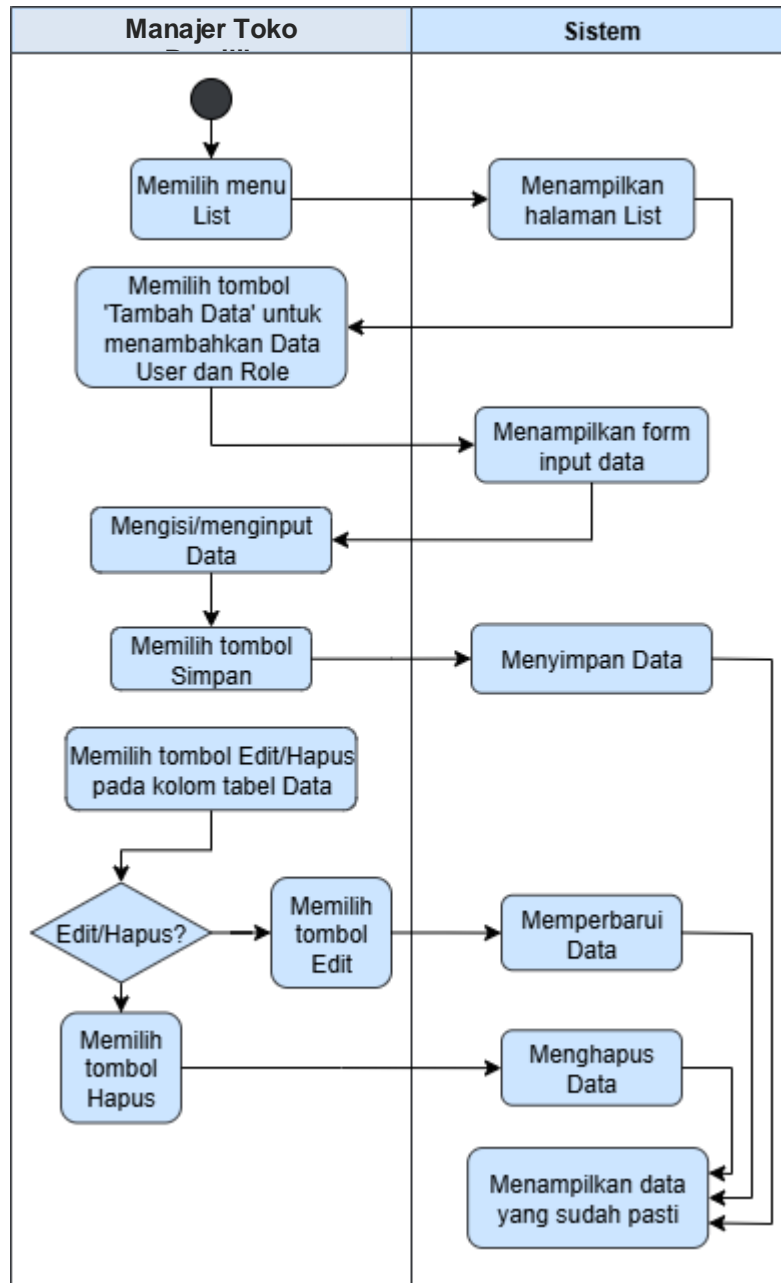


Figure 6. Activity Diagram (Input Data, User, and Role)

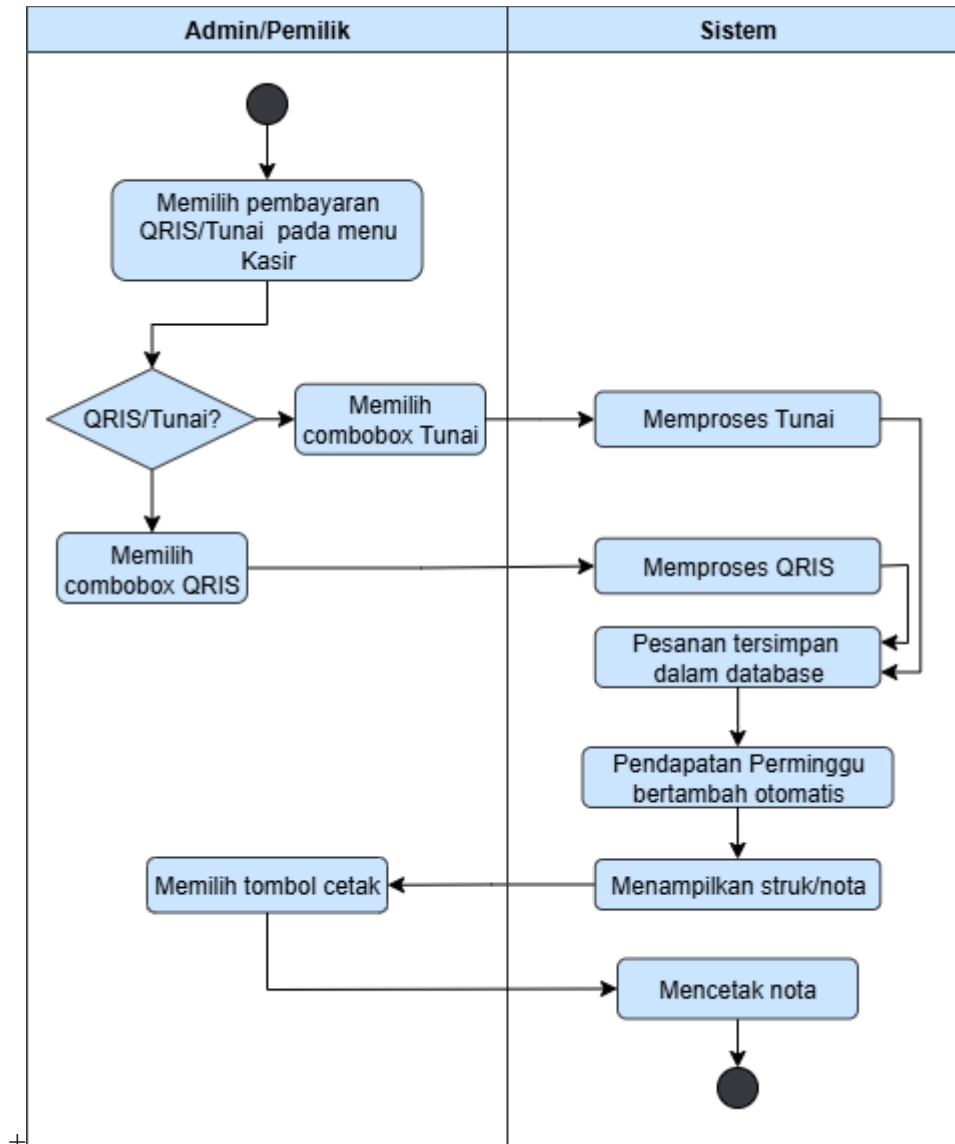


Figure 7. Payment Activity Diagram

### Database

The following tables are designed based on the Class Diagram and include the data type of each field as well as Primary Key and Foreign Key information resulting from the relationships between tables [21]. This design meets the system's requirements for structured, efficient data processing. By using Primary Keys, each record in a table can be uniquely identified, while implementing Foreign Keys enables relationships between tables, facilitating data integration and processing across entities.

Tabel 1. Item Database

Nama	Field	Keterangan
id_barang	int(11)	Primary Key
tanggal_masuk	Datetime	
Nama	varchar(50)	
Harga	int(11)	
Jumlah	int(11)	

Tabel 2. Transaction Database

Nama	Field	Keterangan
id_transaksi	bigint(20)	Primary Key
Total	bigint(20)	
Bayar	bigint(20)	
Kembali	bigint(20)	
payment_method	varchar(20)	
payment_status	varchar(20)	
order_id	varchar(50)	
created_at	Datetime	

**Entity Relationship Diagram**

This figure presents the Entity Relationship Diagram (ERD) of Loddy’s Pet Shop sales system application, designed to illustrate the relationships among entities in table form. The ERD serves as the foundation for developing the cashier system to facilitate transaction processing and data management at Loddy’s Pet Shop. In addition, it serves as a reference for database design, ensuring the system operates efficiently and in a structured manner.

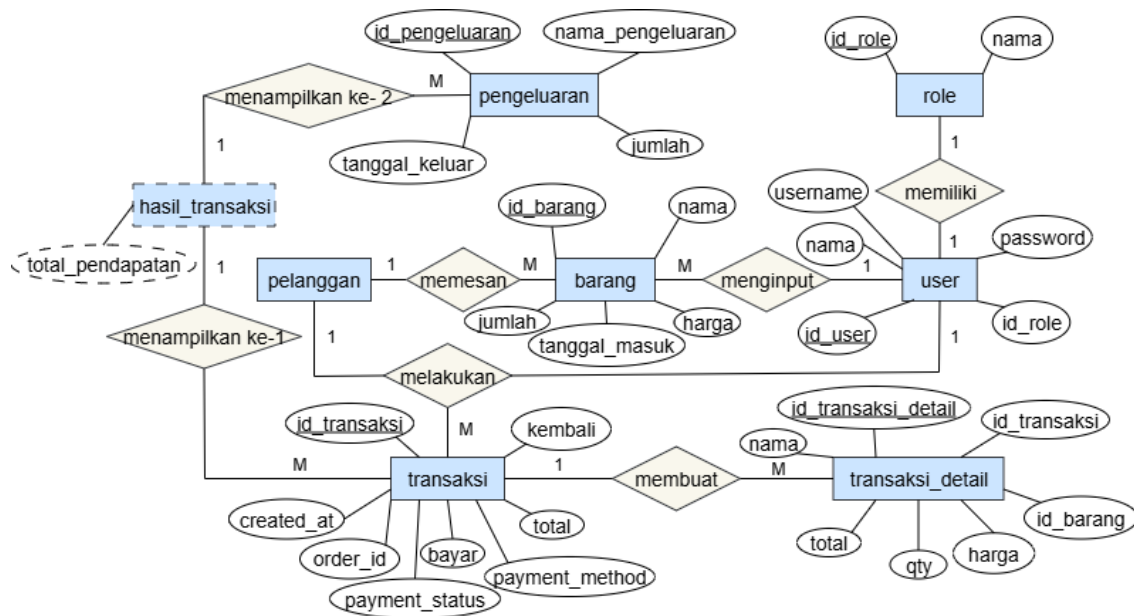


Figure 8. Entity Relationship Diagram

### Test Normalization

This process involves dividing the data into small tables connected by primary and foreign keys, so that data is stored more efficiently and consistently [19].

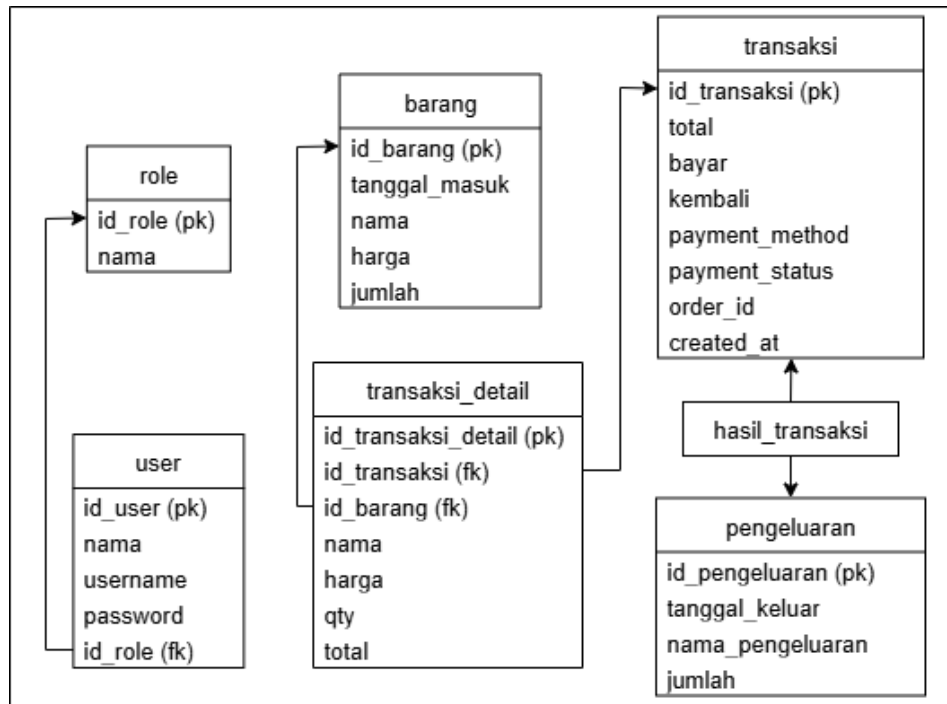


Figure 9. Third Normalization Test

## 3. RESULTS AND DISCUSSION

The QRIS-based payment system at Loddy's Pet Shop was developed using the PHP programming language and a MySQL database hosted on a web server. Apache handles data exchange between the web server and the browser, the web server engine. In practice, the web application can be run on a computer using a browser such as Mozilla Firefox or Google Chrome.

### 3.1. Results

#### Interface Implementation

##### Login Page

This page is the login interface used by the Store Manager, Cashier Admin, Warehouse Admin, and Staff (users). To access the dashboard based on their access rights, users must first enter their username or email address and password. If the login process is successful and the user's access rights match the assigned access rights, the user will be redirected to the dashboard page.

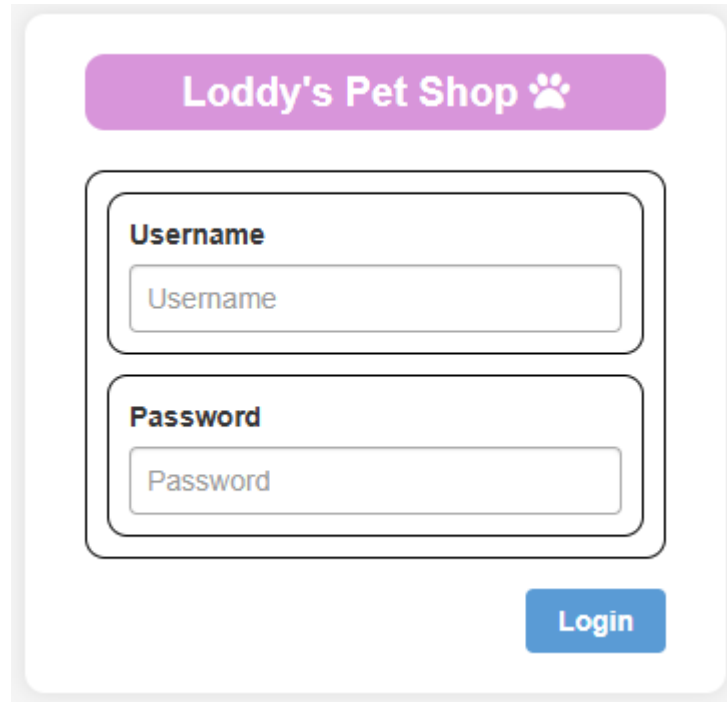


Figure 10. Login Page

### Dashboard Page and List of Items

This page displays the Dashboard menu, which visually presents important information to facilitate data monitoring and analysis. As users add items, process transactions, or record expenses, the system automatically updates data such as Number of Items, Weekly Revenue, and Weekly Expenses.

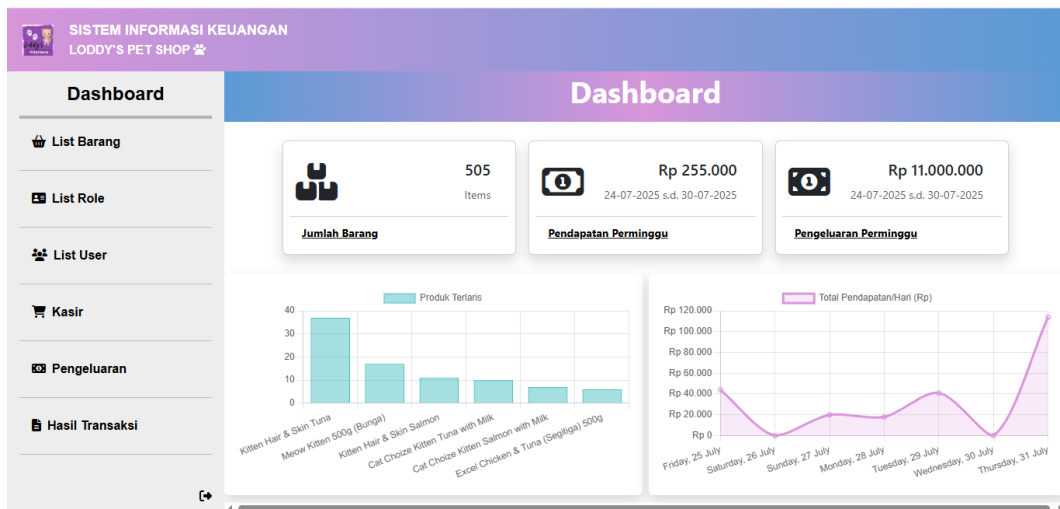


Figure 11. Dashboard Page

### User List and Role List

The following displays two main menus: the User List Menu and the Role List Menu. The User List displays users registered in the system, while the Role List displays roles in the system. If the required role is not yet available, the Store Manager must first add it via the Role List menu before creating account data in the User List menu.

## List User

Tambah data

ID User	Nama	Username	Password	Role Akses	Aksi
2	Adeline	adeline	12345	Admin Kasir	<a href="#">Edit</a> <a href="#">Hapus</a>
8	Bunga	bunga	12345	User	<a href="#">Edit</a> <a href="#">Hapus</a>
10	Loddy	loddy	Loddys1990	Pemilik	<a href="#">Edit</a> <a href="#">Hapus</a>
11	Belle	belle	12345	Admin Gudang	<a href="#">Edit</a> <a href="#">Hapus</a>

Figure 12. User List

## List Role

Tambah Data

ID Role	Nama	Aksi
1	Admin Kasir	<a href="#">Edit</a> <a href="#">Hapus</a>
5	User	<a href="#">Edit</a> <a href="#">Hapus</a>
6	Pemilik	<a href="#">Edit</a> <a href="#">Hapus</a>
7	Admin Gudang	<a href="#">Edit</a> <a href="#">Hapus</a>

Figure 13. Role List

## Payment Page

This page displays the Cashier menu, where the Cashier Admin or user can select items and enter quantities, which are then automatically added to the table. If a customer cancels a purchase, the cart can be reset by clicking the Reset Cart button. After the ordering process is completed, payment can be made in cash or via QRIS.

## Kasir

Ketik nama barang  [Tambah](#)

[Perbarui](#) [Reset Keranjang](#)

Nama	Harga	Qty	Subtotal	
Kitten Hair & Skin Tuna	20,000	<input type="text" value="2"/>	40,000	<a href="#">✕</a>
Kitten Hair & Skin Salmon	20,000	<input type="text" value="1"/>	20,000	<a href="#">✕</a>

Total Rp. 60,000

Metode Pembayaran:

[Selesai](#)

Figure 14. Cashier Page

Total Rp. 60,000

Metode Pembayaran

Tunai

Bayar

Rp. 100.000

Selesai

Figure 15. Cash Payment Page

Struk Pembayaran

Struk Pembayaran

31/07/2025 23:46:02

ID Transaksi: CASH-1753980362-5754

Nama Barang	Harga	Qty	Subtotal
Kitten Hair & Skin Tuna	20,000	2	40,000
Kitten Hair & Skin Salmon	20,000	1	20,000

Total: Rp 60,000

Metode: CASH

Bayar: Rp 100,000

Kembali: Rp 40,000

Status: **Berhasil**

Terima kasih telah berbelanja

Tutup Cetak

Figure 16. Cash Payment Receipt Page



Figure 17. Payment Page via QRIS

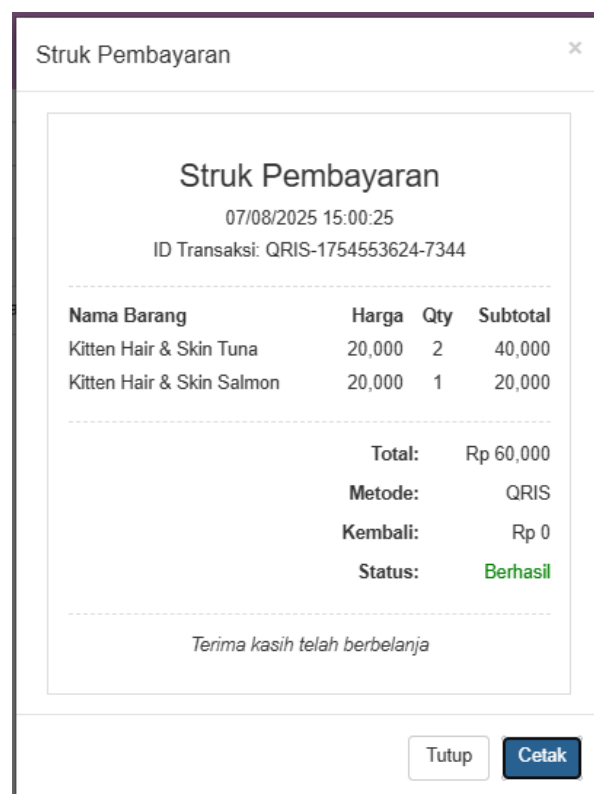


Figure 18. QRIS Payment Receipt Page

Procurement Page

The following displays two main menus: the Item List and Expenses. The Item List menu is used to add item data, while the Expenses menu records various expenses, such as purchases from suppliers or operational needs (e.g., employee salaries). The Expenses menu is designed similarly to the Role List and User List menu.

### List Barang

Tambah data

Pilih Barang:  Jumlah:  OK

ID Barang	Tanggal Masuk	Nama	Harga	Jumlah Stok	Aksi
5	03-06-2025 22:23	Meow Kitten 500g (Bunga)	22000	36	<span style="background-color: #9b59b6; color: white; padding: 2px 5px; border-radius: 3px;">Edit</span> <span style="background-color: #e74c3c; color: white; padding: 2px 5px; border-radius: 3px;">Hapus</span>
6	03-06-2025 22:24	Excel Chicken & Tuna (Segiliga) 500g	12500	9	<span style="background-color: #9b59b6; color: white; padding: 2px 5px; border-radius: 3px;">Edit</span> <span style="background-color: #e74c3c; color: white; padding: 2px 5px; border-radius: 3px;">Hapus</span>
7	03-06-2025 22:24	Meow Persian Adult 500g (Bintang)	22000	9	<span style="background-color: #9b59b6; color: white; padding: 2px 5px; border-radius: 3px;">Edit</span> <span style="background-color: #e74c3c; color: white; padding: 2px 5px; border-radius: 3px;">Hapus</span>
8	03-06-2025 22:24	Meow Persian Kitten (Kotak)	23000	22	<span style="background-color: #9b59b6; color: white; padding: 2px 5px; border-radius: 3px;">Edit</span> <span style="background-color: #e74c3c; color: white; padding: 2px 5px; border-radius: 3px;">Hapus</span>
9	03-06-2025 22:25	Meow Salmon 500g	18000	9	<span style="background-color: #9b59b6; color: white; padding: 2px 5px; border-radius: 3px;">Edit</span> <span style="background-color: #e74c3c; color: white; padding: 2px 5px; border-radius: 3px;">Hapus</span>

Figure 19. List of Items

### Pengeluaran

Tambah Data

ID Pengeluaran	Tanggal Keluar	Nama Pengeluaran	Jumlah (Rp)	Aksi
3	25-07-2025 00:18	Gaji Karyawan	Rp 10.000.000	<span style="background-color: #9b59b6; color: white; padding: 2px 5px; border-radius: 3px;">Edit</span> <span style="background-color: #e74c3c; color: white; padding: 2px 5px; border-radius: 3px;">Hapus</span>
4	25-07-2025 00:18	Sedekah	Rp 500.000	<span style="background-color: #9b59b6; color: white; padding: 2px 5px; border-radius: 3px;">Edit</span> <span style="background-color: #e74c3c; color: white; padding: 2px 5px; border-radius: 3px;">Hapus</span>
5	25-07-2025 00:19	Uang Makan Karyawan	Rp 500.000	<span style="background-color: #9b59b6; color: white; padding: 2px 5px; border-radius: 3px;">Edit</span> <span style="background-color: #e74c3c; color: white; padding: 2px 5px; border-radius: 3px;">Hapus</span>
6	06-08-2025 22:10	Ambil Barang 1 Truk	Rp 3.000.000	<span style="background-color: #9b59b6; color: white; padding: 2px 5px; border-radius: 3px;">Edit</span> <span style="background-color: #e74c3c; color: white; padding: 2px 5px; border-radius: 3px;">Hapus</span>

Figure 20. Expense Menu

Sales Results Payment Report Page

This page displays payment data for all transactions carried out through the Cashier menu. The Store Manager or Cashier Admin can view detailed transaction data and total revenue for a selected date.

### Transaksi

Dari:  📅 Sampai:  📅 Tampilkan Reset Cetak Hasil Transaksi

ID Transaksi	Tanggal	Total	Bayar	Kembali	Metode	Status	ID Order
123	2025-08-06 23:10:50	19.600.000	20.000.000	400.000	cash	paid	CASH-1754496650-2899
122	2025-08-06 00:54:04	55.000	55.000	0	qris	paid	QRIS-1754416440-2365
121	2025-08-06 00:45:49	23.000	100.000	77.000	cash	paid	CASH-1754415949-1066
120	2025-08-06 00:43:41	18.000	100.000	82.000	cash	paid	CASH-1754415821-6571

Figure 21. Transaction Menu

Hasil Transaksi		
<b>LODDY'S PET SHOP</b> JALAN KASEPUHAN NO.10D		<b>Hasil Transaksi</b> TANGGAL CETAK: Rabu, 06 Agustus 2025 NO.LAPORAN: 20250806183432
NO	KETERANGAN	JUMLAH
1	Pendapatan	Rp 22.348.000
2	Pengeluaran	Rp 14.000.000
<b>TOTAL :</b>		<b>Rp 8.348.000</b>

Figure 22. Sales Report ('Print Transaction Results' button)

### 3.2. Discussion

Based on the implementation results, the QRIS-based payment system at Loddy's Pet Shop successfully overcomes the weaknesses of the previous manual transaction system, which was prone to calculation errors, data inaccuracies, and transaction delays during busy hours. By automating sales recording, total payment calculation, and receipt generation for both cash and QRIS transactions, the system improves transaction efficiency and reduces human error [22].

The implementation aligns with the national digital payment standard issued by Bank Indonesia through the QRIS regulation [23], which aims to standardize QR code payments and increase transaction efficiency and security [24]. The use of dynamic QRIS codes generated through Midtrans integration ensures that each transaction contains a unique payment value, thereby reducing the risk of mismatched payments and enhancing transaction validation [25].

These findings are consistent with previous studies indicating that QRIS adoption supports the digitalization of MSMEs and improves transaction effectiveness [26]. Research by Sinaga et al. also shows that QRIS usage contributes to increased transaction performance and operational efficiency in small businesses [27]. Furthermore, QRIS implementation has been found to support better financial governance and transaction recording among MSMEs [26]. Similar to those findings, the developed system not only accelerates the payment process but also improves financial data organization through automated reporting features.

Unlike prior research that mainly discusses QRIS from a digital adoption or policy perspective, this study emphasizes the integration between a sales information system and a payment gateway to create a comprehensive transaction management solution tailored to the operational needs of Loddy's Pet Shop. The system generates automated transaction and income reports based on selected dates, supporting managerial monitoring and decision-making.

Overall, the system meets the research objectives by improving efficiency, accuracy, and service quality. However, it remains limited to a web-based local server environment and depends on stable internet connectivity for QRIS transactions. Future development may include cloud-based deployment and mobile platform integration to enhance scalability and accessibility.

#### 4. CONCLUSION

Based on the results of the system implementation, several conclusions can be drawn as follows:

- a. The QRIS system was designed to replace manual transaction recording using receipt books, making the transaction process more modern and efficient.
- b. The integration of automated transactions and payment processes minimizes errors in recording prices and item quantities and accelerates transaction processing, thereby reducing customer waiting time.
- c. Automated financial and inventory recording ensures that data are consistently, accurately, and systematically maintained, enabling easier monitoring of cash flow and best-selling products.

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